

ABSTRACT

The present invention relates to an apparatus for controlling safety-critical processes. The apparatus includes at least one safe control unit for controlling the safety-critical processes and at least two safe signal units which are connected via I/O channels to the safety-critical processes. The safe control unit and the safe signal units are connected to a common fieldbus. The safe signal units communicate with the safe control unit, but not with one another, when the apparatus is in the control mode. The safe signal units have an evaluator for evaluating a fault message which is broadcasted across the fieldbus, as well as a switching device which autonomously change the safety-critical process to a safe state when a fault message which is evaluated as being relevant occurs.